

AUGUST 6.

The President, Dr. RUSCHIENBERGER, in the chair.

Nine members present.

Note on Cottus Grænländicus, Fabr.—Dr. GILL communicated the results of certain observations made on *Cottus grænländicus*, Fab. (*Acanthocottus grænländicus*, Girard), during the past season at the island of Grand Manan, New Brunswick.

Two forms, agreeing in most respects except color, have been always noticed together by those who have been in a position to observe numbers. The most obvious external difference between these consists in the color, one having the flanks downward and the abdomen yellowish, while in the other form the abdomen is spotted with white. Descriptions in several works have been based on only one of these forms, but in Günther's "Catalogue of the Acanthopterygian Fishes" (II. p. 161), under the general term "*Cottus grænländicus*," the two forms are mentioned, one being "Var. α . Sides of the belly with large white spots;" the other "Var. β . Sides irregularly marbled;" each was represented in the British Museum by four specimens. No suspicion of any sexual relation of those forms was expressed.

The universal occurrence of these two forms together and in approximately equal numbers led the speaker to suspect that they really represented sexual conditions of the same species. Dissection confirmed the suspicion, and it was found that all individuals with white spots on the abdomen were males, and all without, females. In order to remove doubt, sixteen specimens were dissected, all caught within a couple of hours, at Grand Manan, from the wharf of Mr. Walter McLaughlin.

Six of these had (1) the belly ornamented with very distinct white round spots, and (2) the ventral fins were white, banded with black; all these were furnished with spermaries; (3) the spiny tubercles on the sides were also more numerous, and developed (below as well as above) the lateral line; (4) the spinous dorsal fin was appreciable higher, and (5) several of the median rays (sixth to eleventh) of the pectoral fins were mucronated or studded with minute tubercles.

Of the other form, ten specimens were examined and found with well-developed ovaries (the right larger than the left). These were (1) yellowish towards the belly, and with (2) the ventrals yellow, banded with black; (3) the spiny tubercles were, as a rule, less developed, and in one specimen sparsely (2-4) existent below the lateral line; (4) the spinous dorsal was comparatively lower, and (5) all the pectoral rays were perfectly smooth on their inner surfaces.

The intestinal canal from the cæca to the anus, when extended, was about twice as long as the entire fish (including the caudal).

The cæca were counted in five individuals, and in three were nine in number; in one ten; and another eleven.

The rays of the fins were also counted, with the following result:—

MALES.

1. D. x., 16.	A. 13.	P. 18 (6th to 11th muricated).
2. " "	" "	" (7th to 11th ").
1. " "	14.	" (5th to 8th ").
1. " "	" "	" (6th to 10th ").
1. x. i. 17!	" "	" (8th to 10th ").

FEMALES.

1. D. ix. 16.	A. 13.	P. 17 (both sides).
1. ix. 17.	" "	18.
1. ix. 19.	14.	18.
1. x. 15.	13.	17 (both sides).
1. x. 16.	13.	18.
1. x. 16.	14.	"
1. x. 17.	13.	"
1. x. 17.	15.	"
2. x. 18.	14.	18.

There thus appears to be a considerable range of variation in the number of rays. The most common number is represented by the formula D. x, 16-17, A. 13, P. 18. The number of pectoral rays, as might *à priori* be expected, is the most constant.

There seems to be no valid reasons for the distinction of "*Acanthocottus variabilis*," Ayres, and "*Acanthocottus mucosus*," Ayres, from *Cottus grœnlandicus*, and certainly no distinctive characters have been assigned.

In answer to questions, it was added that no definite relation existed between the numbers of rays of the vertical fins and the number of vertebræ, nor was there any corresponding variation. The most common number of vertebræ in fishes is ten dorsal and fourteen caudal (10 + 14), but the difference in the number of rays in forms thus distinguished is very considerable.

AUGUST 13.

The President, Dr. RUSCHENBERGER, in the chair.

Nine members present.

Mr. THOMAS MEEHAN said he had observed this season that the spawn of the common mushroom (*Agaricus campestris*) radiated from a central point in a manner which he thought had not been recorded by other observers. As usually seen, the mushroom seemed to rise from various points along the mycelium, or underground thread, without any regular order or system. Fungi, like flowering plants, had other modes of propagation besides seeds. As in the potato, we had one system elevating its parts into the atmosphere ending in seeds, and another sending threadly stolons under ground terminating in distended stems or tubers—the